Autumnwood ESH Consultants, LLC
6539 Autumnwood Court
Mount Pleasant, Wisconsin 53403
Phone: 262.237.1130

13 July 2016

Mr. John Nordine
U.S. EPA Region 5
RCRA Enforcement and Compliance Assurance Branch (LU-9J)
77 West Jackson Boulevard
Chicago, Illinois 60604

Re: Central Wire, Union, Illinois RCRA CMI Monthly Progress Report for June 2016

Dear Mr. Nordine:

Enclosed please find the RCRA CMI Monthly Progress Report for the Central Wire facility located in Union, Illinois for June 2016.

This report includes eDMR for the groundwater pump and treat facility and the laboratory analytical report, which includes the effluent data used in the eDMR for June 2016 (Attachment 1). It also includes the lab report and locations of the monitoring and residential wells for the June semiannual RCRA monitoring well and residential well sampling (Attachment 2). Lastly, it includes lab reports and associated figures and tables for the 2016 RCRA CMI Field Investigation (Attachment 3).

The files in the Attachments have the preface A-1 for Attachment 1, A-2 for Attachment 2 and A-3 for Attachment 3. Please be aware that Figure 1 in Attachment 2 is upside down. It could not be save right-side-up.

If you have any comments or questions regarding the progress of this project, please contact me at (262) 237-1130.

Sincerely,

Autumnwood ESH Consultants, LLC

John W. Thorsen, P.E.

JWT:jt

encl

cc:	Joyce Munie	IEPA
	Robert Kay	USGS
	Gerald W. Ruopp	Central Wire
	Robert Johnson	Central Wire

MONTHLY PROGRESS REPORT
Central Wire Union, Illinois Site
June 2016

1. **Progress Made This Reporting Period** – This reporting period Central Wire continued the operation and maintenance of the groundwater extraction and treatment system. Central Wire treated an average of 621,000 gallons per day with a maximum daily flow of 628,000 gallons per day and met effluent limitations for pH, 1,1,1-Trichloroethane (TCA), Trichloroethene (TCE) and Tetrachloroethene (PCE). The electronic Discharge Monitoring Report (eDMR) for June 2016 is attached to this report.

The laboratory analytical report for the pump and treat effluent noted that the groundwater pump & treat effluent samples were collected on June 7 and arrived at the lab on June 8, 2016 at 0.3° C.

The summary of the irrigation pumping hours are summarized in Table 1, below.

Table 1
Summary of 2016 Irrigation Pumping Hours per Week at Ex. 6 Personal Privacy (PP)
(May 31 through July 1, 2016)

Date of Hour Meter Reading	Ex. 6 Personal Privacy (PP)			
	Hour Meter Reading	Hours Pumped	Hour Meter Reading	Hours Pumped
5/31/2016	5881	0	3706	0
6/6/2016	5881	0	3713	7
6/13/2016	5890	9	3731	18
6/20/2016	5896	6	3749	18
6/28/2016	5938	42	3789	40
7/1/2016	5990	52	3813	24
Totals		**109**		**107**

On July 1 Central Wire personnel downloaded the data logger in the field to a laptop computer and reinserted the same data logger into monitoring well DGW-2I.

The groundwater level monitoring data from downgradient monitoring well DGW-2I for June 2016, the June 2016 precipitation and irrigation well pumping over the month have been graphed / plotted and are attached to this report as Table 2.

The depth to water measured from the top of the well casing was 5.70 feet in DGW-2I on May 31, 2016 at approximately 12:07; therefore, there nominally was 24.64 feet of water above the data logger. The first equalized data logger reading on May 31 at 12:41 was 24.546 feet, so the measured water level should have been approximately 5.79 feet (30.34-24.546). The difference was 0.094 feet.

On July 1, the last data logger reading at 11:41 am calculated the water level at 23.97 feet above the data logger. Therefore, there should have been a depth to water from the top

of the casing of 6.37 feet (30.34 – 23.97). The depth to water on July 1 was measured at 6.37 feet.

The groundwater elevation in June 2016 reached its highest level on June 18 at 815.666 feet above mean sea level and its low on June 30 at 814.722 feet above mean sea level for a variance of 0.944 feet over the month.

Summary of Validated Data and Results

Pump & Treat System NPDES Sampling

The monthly effluent sampling took place on June 7, 2016. The permit limitations and analytical results are shown in Table 3, below.

Table 3
Central Wire Union Illinois Pump & Treat Discharge Analytical Results

Parameter	Effluent Limitation (Daily Maximum), µg/L	June 2016 Analytical Results, µg/L
1,1,1-Trichloroethane	20	< 0.38
Tetrachloroethene	20	< 0.37
Trichloroethene	20	<0.16

The June NPDES analytical report is attached to this Monthly Progress Report as Attachment 1.

This report also had environmental analytical results for the North Pond and South Pond. These ponds are Illinois EPA-regulated seepage ponds for Central Wire's rinse waters from the annealing process, non-contact cooling water, boiler blowdown and storm water. Data from the quarterly analysis of samples collected at extraction wells 1 and 2 are also included in this lab report.

Semiannual RCRA Monitoring Well and Residential Well Sampling Event

The spring semiannual RCRA CMI groundwater and residential well sampling event was conducted on June 7 & 8, 2016. The locations of the monitoring wells and the residential wells are provided on Attachment 2, Figure 1. The results / trends are summarized on pages 3 & 4. The historical data and plots of the data are provided in Attachment 2 (figures 2 through 13). The laboratory report for this sampling event is also in Attachment 2. Note: the "Login Sample Receipt Checklist" indicates that there were discrepancies between the containers received and the Chain of Custody form. The sample collected as part of the semiannual sampling event was inadvertently left in the well house at the South Branch Nursey. Since the Geoprobe investigation was still in the field, the irrigation well sample was collected and reported as a part of the Geoprobe investigation,

Table 1 in Attachment 2 provides a crosswalk between the residential well owner's name (which is on Attachment 2, Figure 1) and the address, which is the Sample Identification in the analytical report for the residential wells. The well stabilization field data is included in Attachment 2 as Table 2. Attachment 2 Table 3 presents the 2016 data points at DGW-2D.

- **MW (Monitoring Well) 2** - No Environmental Protection Agency (EPA) Maximum Contaminant Limits (MCLs) have been exceeded since December 2007, see Attachment 2, Figure 2.
- **MW-4** - Tetrachloroethene (PCE) has been exceeded since monitoring began in 1995 and since 2010 has trended downward from 70 micrograms per liter (μg/L) in December 2010 to 23 μg/L in June 2016. See Figure 3. The Trichloroethene (TCE) has in general been below the MCL since December 2012, but slightly exceeded the MCL in October 2014 and June 2016.
- **MW-5** - The PCE MCL has been exceeded since monitoring began in 1995 and has trended downward from 210 μg/L in December 2003 to the 100s in the 2000s and has been less than 100 μg/L since June 2013 and was found at 9.3 μg/L in June 2016, see Attachment 2, Figure 4. TCE, 1,1,1-Trichloroethane (TCA) and Dichloroethene (DCE) MCLs were last exceeded in the 2002 – 2005 time frame.
- **MW-5D** – TCE increased rapidly from 1995 to 2003 (0 to 63 μg/L) and has generally trended downward since then with the seven latest readings ranging from 19 μg/L down to11 μg/L, see Attachment 2, Figure 5. PCE has been below the MCL of 5 μg/L since December 2005.
- **MW-6** - Has only exceeded the PCE MCL and has been slightly below the MCL of 5 μg/L since June 2013, see Attachment 2, Figure 6.
- **MW-7**- Regularly exceeds the MCL for PCE and has been trending lower since it reached 200 μg/L (the most recent result was 47 μg/L), see Attachment 2, Figure 7. PCE has been less than 100 μg/L since October 2008. The DCE MCL was last exceeded in December 2009, but other than that isolated occurrence, has been found at levels below the MCL since December 2003. The TCE MCL was last exceeded in December 2012.
- **MW-8** - Has regularly exceeded the PCE and TCE MCLs since testing began in 1995, see Attachment 2, Figure 8. PCE has come down from 200 μg/L in 2008 to a range of 61 to 72 μg/L since December 2011. TCE levels have come down from a high of 34 μg/L in June 1995 to the June 2015 value of 6.7 μg/L. Other than the 13 μg/L found on October 2014 and the 15 μg/L in June 2016, values have been found at less than 10 μg/L since December 2011.
- **MW-9** - Has not exceeded any MCL since April 2002 when it exceeded the PCE MCL with a value of 12 μg/L, see Attachment 2, Figure 9. There have only been three detections since then.

- **MW-HBR** - Only exceeds the MCL for PCE which it has done since monitoring began in 1995. However, it has generally trended downward from a high of 130 µg/L in 2003 to the current value of 61 µg/L, see Attachment 2, Figure 10. The duplicate sample was collected here and matched the values found in this sample.
- **DGW-1** is a three well nest – shallow (S), Intermediate (I) and Deep (D).
    - No MCLs have been exceeded in **DGW-1S** except TCE at slightly above the MCL at 5.6 µg/L in June 2016 (Attachment 2, Figure 11).
    - **DGW-1I** has exceeded MCLs for DCE, TCE, PCE, TCA and 1,2-Dichloroethane (DCA), see Attachment 2, Figure 12. The PCE MCL has not been exceeded since 2002. The DCA MCL has not been exceeded since 2005. The TCA was below the MCL in the December 2013 and June 2014 samples, then spiked up to 420 µg/L in October 2014, and was at 350 µg/L in the June 2016 sample. DCE and TCE were found in June 2016 at 82 and 61 µg/L, respectively, with no apparent trend.
    - **DGW-1D** has exceeded MCLs for DCA, DCE, TCE and Vinyl Chloride (VC), see Attachment 2, Figure 13. The Vinyl Chloride (VC) MCL had been exceeded in four of the seven sampling events between June 2013 and June 2016. MCLs for 1,2-DCA have not been exceeded since December 2012. TCE was below the MCL in December 2015 and June 2016. 1,1-DCE has generally trended lower since the high of 98.4 µg/L was recorded in December 2005 and was at 9.1 µg/L in June 2016.
- **DGW-2** is also a three well nest (shallow, intermediate and deep) that has been sampled since 2012. There have been no detections in these three wells; however, 1,1,1-TCA (at 1.2 µg/L) and TCE (at 0.5 µg/L) were detected in DGW-2D in June 2016, the first detections (see Attachment 2, Table 3).

Six residential wells and one irrigation well Ex. 6 Personal Privacy (PP) were sampled in the June 2016 semiannual RCRA sampling event. There were no detections of any VOCs by EPA Method 8260B, including all of the chemicals of concern at Central Wire. (Note: the analytical results for the Ex. 6 Personal Privacy (PP) well are found in in Attachment 3 (A-3 – PI Analytical Report 3.pdf).

2016 RCRA CMI Field Investigation

EPA requested that Central Wire undertake a field investigation in 2016 to determine where the end of the chlorinated plume was located. This was previously investigated in 2007, 2008, 2009, 2011, 2012 and 2014.

In January 2016 a Work Plan was submitted to EPA for the plume investigation EPA requested Central Wire to conduct in spring 2016. After responding to EPA comments, the work plan was approved by EPA on March 9, 2016 for work to commence on June 6, 2016.

The work identified in the work plan was executed between June 6 and June 14, 2016 and the sample laboratory analytical results have been provided by Test America Labs to Central Wire. Three lab reports are provided in Attachment 3. Central Wire duplicated the scope of the 2014 RCRA CMI Field Investigation, collecting water samples via bladder pump at the 13 locations identified in Figure 1 and Table 1 of Attachment 3. EPA requested Central Wire to add an additional (13th) location, GP-27, located in the northeast corner of the study area. Three low flow groundwater samples were collected at each Geoprobe location at approximately 27 feet below ground surface (bgs), 57 feet bgs and 85 feet bgs. Each sampling location was analyzed by Test America Labs in University Park for volatile organic compound by EPA Standard Method 8260B.

Thirty-nine samples were collected at 13 Geoprobe locations and one sample was collected at the South Branch Nursery irrigation well. In addition, four duplicate samples were collected and daily field blanks (6) were collected to confirm equipment decontamination procedures were effective.

The groundwater at each sampling location was stabilized in accordance with ASTM Standard D6771-02, "Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations," and EPA/540/S-95/504, "Low Flow (Minimal Drawdown) Ground-Water Sampling Procedures." This field stabilization data can be found in Attachment 3, Table 3.

The Chemicals of Concerns (CoC) have been Trichloroethene (TCE) 1,1-Dichloroethene (1,1-DCE or DCE) and 1,1,1-Trichloroethane (1,1,1-TCA or TCA), In addition there was one occurrence where cis-1,2-Dichloroethene exceeded the MCL of 70 μg/L at GP-3D with a value of 79 μg/L.

Central Wire has plotted the data for sampling locations that had one or more than one value exceeding the MCL at that location. These graph and plots are shown in Attachment 3, Figure 2. Samples exceeded the MCL at 8 locations: GP- 3S (11 exceedances since 2007), GP-3I (15), GP-3D (11), GP-8S (3, last in 2014) and GP-8I (1 in 2014). These are locations where sampling began in 2007 and 2008 and have shown exceedances of the MCLs since that time. Additional exceedances were located at GP-19S, GP-23S (1 in 2015) and GP-27D (1 in 2016).

The chlorinated plume seemed relatively stable up to 2012; however, the 2014 and 2016 field Investigations have shown some movement of the plume in a northwesterly direction by approximately 300 feet over four years. In 2016 we noted irrigation occurring beyond what we had experienced in the past, though many / most of prior sampling events occurred in the fall of the year.

Upcoming Events/Activities Planned – Central Wire will continue to operate the existing remediation systems. Effluent samples will be collected, analyzed and reported as required in our NPDES permit.

Central Wire is trying to get a competitive bid to rehabilitate Extraction Well No. 2. When Central Wire determines it has competitive prices, they will attempt to rehabilitate the well.

2. **Anticipated Problem Areas and Recommended Solutions** – None.

3. **Key Personnel Changes** – None.

4. **Target and Actual Completion Dates** – This project has not deviated from the project schedule.